



Arthur J. Bauernfeind College of Business

MURRAY STATE UNIVERSITY

Instructor: William F. Lyle

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Office Hours: 8:00 - 10:30 M W F
8:00 - 9:30 T Th,
Other times available by appointment

DEPARTMENT: Computer Science and Information Systems

COURSE PREFIX: CSC COURSE NUMBER: 345 CREDIT HOURS: 3

I. TITLE: Data Structures

II. COURSE DESCRIPTION AND PREREQUISITE(S): Data Structures and abstract data types including arrays, strings, lists, stacks, queues, trees and tree balancing algorithms; hashing techniques with applications to file processing; priority queues and heaps; sorting algorithms; graph algorithms; generalized algorithm design techniques. Emphasis will be placed upon object-oriented design techniques to facilitate software reuse.

Prerequisite(s): CSC 145 with a grade of C or higher.

III. COURSE OBJECTIVES: At the successful completion of this course the student should:

- A. be able to implement and use abstract data types for lists, stacks, queues, trees and graphs
- B. understand the proper applications and limitations of static and dynamic memory management techniques
- C. understand the proper applications and limitations of recursion and recursive algorithms
- D. be able to apply algorithms for searching and sorting to a variety of practical problems
- E. be able to analyze the run time (complexity) of computer algorithms

IV. CONTENT OUTLINE: I intend to cover the following chapters from the required text:

- Chapter 9: Inheritance and Interfaces
- Chapter 12: Object-Oriented Design
- Chapter 13: Recursion
- Chapter 14: Sorting and Searching
- Chapter 15: The Java Collections Framework
- Chapter 16: Basic Data Structures
- Chapter 17: Tree Structures
- Chapter 18: Generic Classes

V. INSTRUCTIONAL ACTIVITIES: Instructional activities include lectures, instructor-directed laboratory exercises, programming assignments, examinations.

VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES: None

VII. TEXT(S) AND RESOURCES: Horstmann, Cay (2013). Big Java – Late Objects, John Wiley & Sons.

VIII. EVALUATION AND GRADING PROCEDURES:

Examinations	60%
Programming Assignments	40%

This is tentative and subject to changes as announced in class.

Programs will be graded on correctness, compliance with style guidelines, efficiency, and internal and external documentation. All assignments are due by 4:00 pm on the due date. Late programs will be accepted but may not receive any credit. All programs must be your individual work; **obvious duplicates will receive a grade of zero.**

Each of you is strongly discouraged from missing a scheduled examination. Should circumstances prevent you from taking a test at the scheduled time, your absence should be excused and a makeup time agreed upon at least 24 hours in advance. Failure to make such arrangements may result in a grade of zero for that test. No additional work will be accepted for "extra credit" or "grade improvement."

A numerical score will be computed based upon the above weights and a letter grade assigned according to a 10-point grading scale. I reserve the right to adjust this scale if the class average is either very high or very low.

IX. ATTENDANCE POLICY: You are expected and strongly encouraged to attend class regularly and on time in order to gain maximum benefit from the course. Class attendance will be checked and will be an explicit factor in the course grade as reflected in the class participation component. You are responsible for all material missed due to class absences. *Students are expected to adhere to the MSU Attendance Policy outlined on page 10 of the 2014-2015 MSU Bulletin.*

X. ACADEMIC HONESTY POLICY:

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students' academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

Violations of Academic Honesty include:

Cheating - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

Fabrication and Falsification - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

Multiple Submission - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

Plagiarism - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

XI. NON-DISCRIMINATION POLICY STATEMENT:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact the Director of Equal Opportunity, 103 Wells Hall. 270-809-3155 (voice), 270-809-3361 (TDD).

- XII. Other:** The College of Business Code of Ethics is available at http://www.murraystate.edu/Libraries/COB_Documents/Code_of_Ethics.sflb.ashx. The collegiate Appeals and Grievance Procedure is available at http://www.murraystate.edu/Libraries/COB_Documents/Appeals_and_Grivance_Procedure.sflb.ashx

Important University Dates:

- August 19 First day of classes. Absences will be recorded.
- August 25 Last day to add a full semester class. Last day to drop any full semester class with no grade. Last day to change any full semester class from AUDIT to CREDIT.
- September 1 Classes dismissed for Labor Day
- October 2 Fall Break Begins
- October 13 Midterm grades due
- October 15 Second half semester classes begin. Last day to change INCOMPLETE grades from Spring/Summer 2014 at Registrar's office.
- November 3 Deadline to submit baccalaureate and associate degree applications on MyGate for May 2015 graduation.
- November 10 Begin Advance scheduling for Spring 2014.
- November 17 Last day to drop a full or second half semester class. Last day to change CREDIT to AUDIT
- November 26 Classes dismissed for Thanksgiving Holiday, 7:30 a.m. Offices closed.
- December 5 Last day of classes
- December 11 10:30 am, Final exam period for CSC 345
- December 13 10:00 am, Commencement
- December 16 Grades are available on student's MyGate Academic tab.

Please fill out this page, detach it and return it to Dr. Lyle.

By my signature below, I certify that I have received a copy of the course syllabus for CSC 345 taught by Dr. William Lyle during the Fall Semester of 2014. Furthermore, I certify that I have read and understand the contents of the course syllabus.

Printed Name _____

Signature _____

Date _____

If you want your grades to be posted, please enter a 4-digit number to identify yourself. If you prefer that your grades are not posted, then enter "None".

My 4-digit code: _____